

REPLACEMENT SHEET

10/821,120
1631

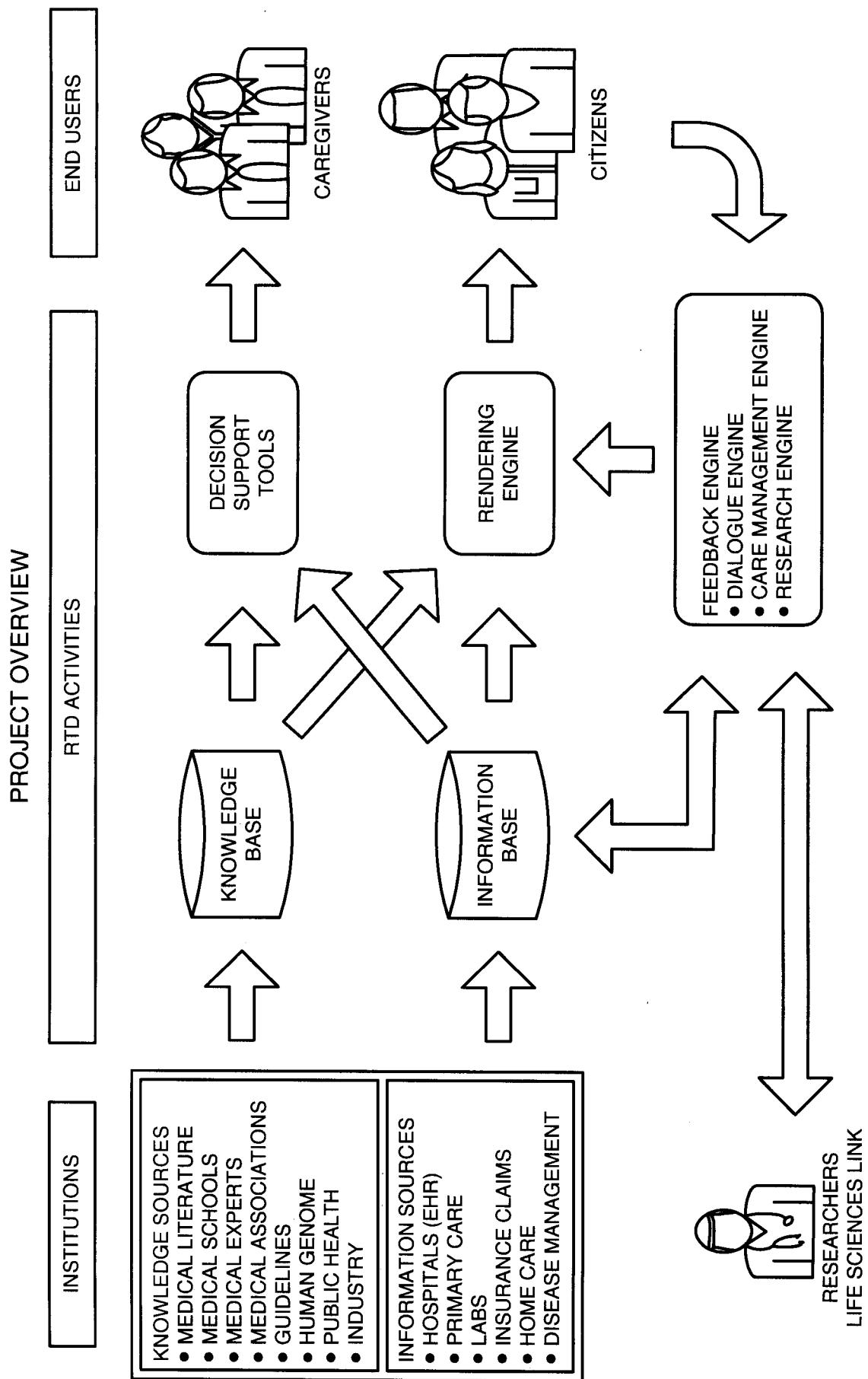


FIG. 1

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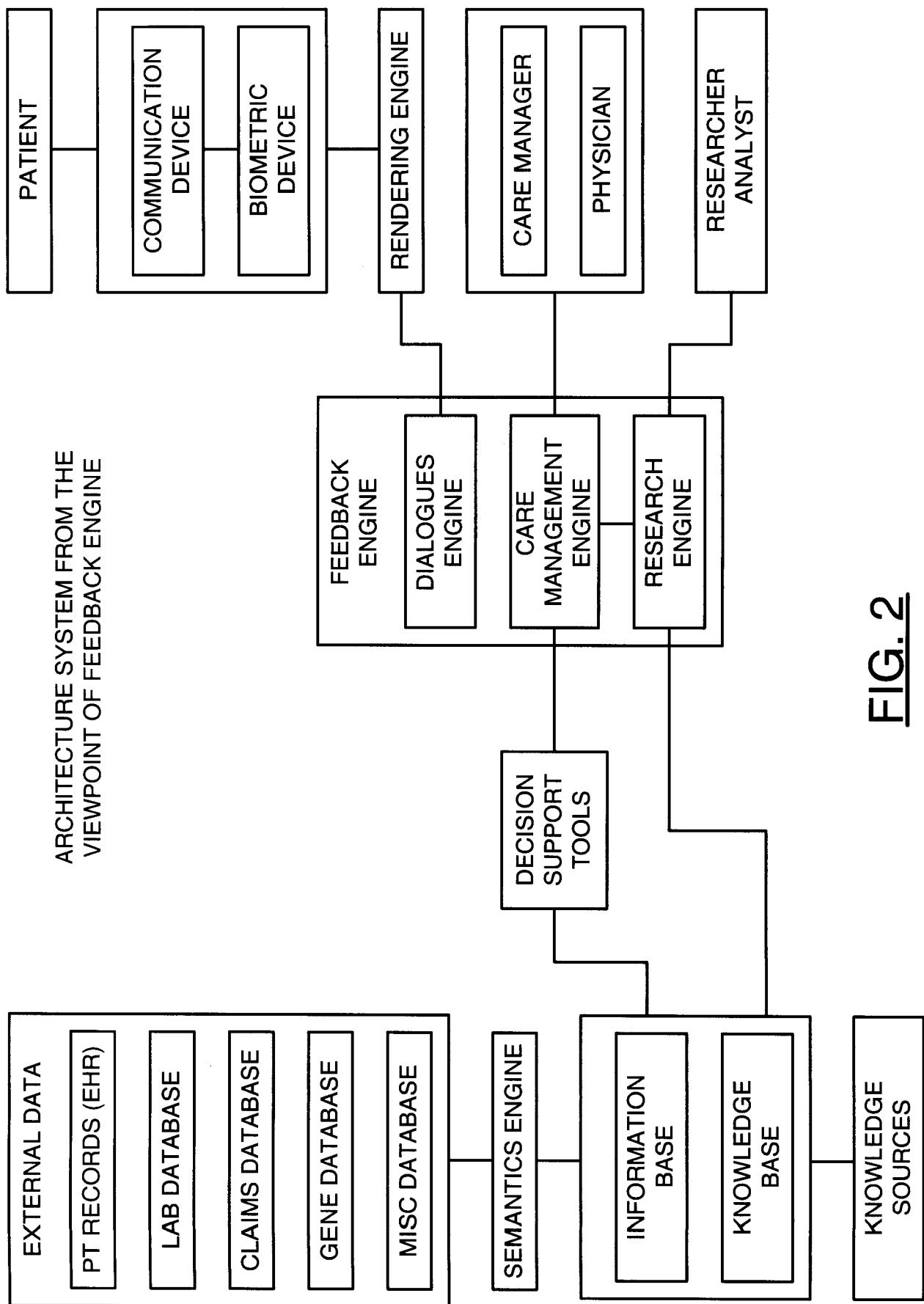


FIG. 2

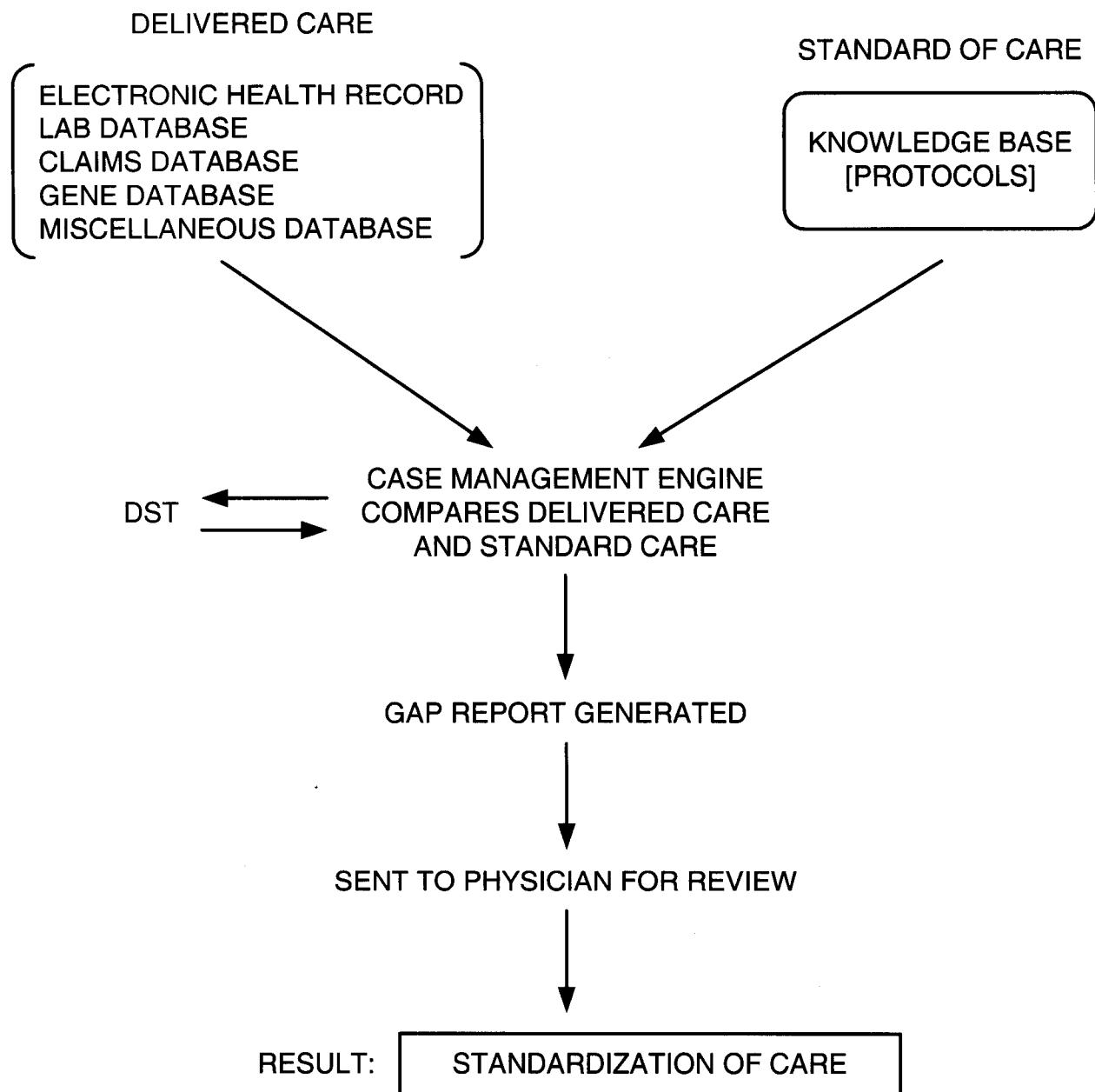


FIG. 3

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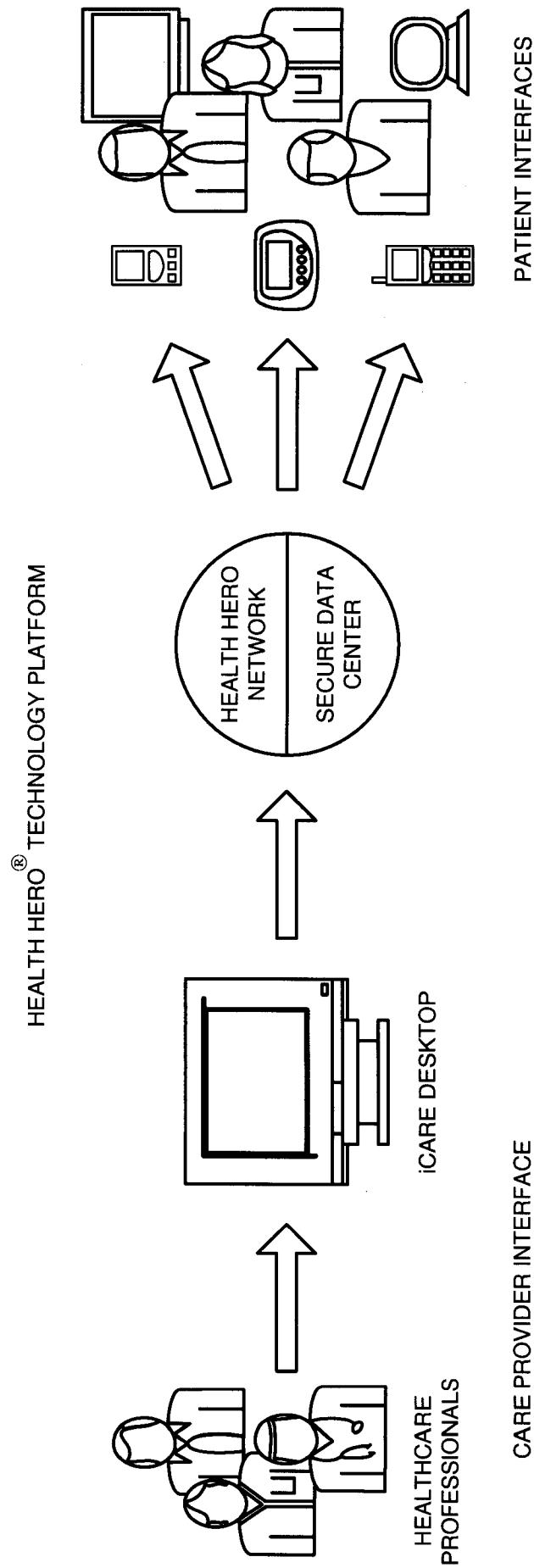


FIG. 4

REPLACEMENT SHEET

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Geoffrey Clapp
Wed. November 26, 2003

HEALTH HERO
NETWORK

Find Patient GO

(Last Name) ► Contact Health Hero ► Help ► Log Out

Home Patient Reports Enrollment Disenrollment Schedule Setup

You have 7 unreviewed inbox items: 1 Alert, 6 High Risk Results and 1 Note overdue

iCare Inbox Refresh Submit

[Check All](#) - [Clear All](#)

Date	Category	Subject
▼		
<input type="checkbox"/>	 07/21/2003	Alert 2 pound weight gain for patient Gill, Hal
<input type="checkbox"/>	<input checked="" type="checkbox"/> 07/21/2003	Results High Risk Symptoms for Patient Lura, Craig
<input type="checkbox"/>	<input checked="" type="checkbox"/> 07/20/2003	Results High Risk Symptoms for Patient Clapp, Geoff
<input type="checkbox"/>	<input checked="" type="checkbox"/> 07/20/2003	Results High Risk Symptoms for Patient Colt, Laura
<input type="checkbox"/>	<input checked="" type="checkbox"/> 07/19/2003	Results High Risk Symptoms for Patient Cherry, Julie
<input type="checkbox"/>	<input checked="" type="checkbox"/> 07/19/2003	Results High Risk Symptoms for Patient Mann, Marie
<input type="checkbox"/>	<input checked="" type="checkbox"/> 07/19/2003	Results High Risk Symptoms for Patient Wu, Dave

FIG. 5

REPLACEMENT SHEET

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		Luna, Craig	HEALTH HERO NETWORK																																																						
		Fri, April 4, 2003																																																							
Find Patient <input type="text"/> (Last Name) <input type="button" value="GO"/>		Contact Health Hero Help Log Out																																																							
<input type="button" value="Home"/> <input type="button" value="Patient"/> <input type="button" value="Reports"/> <input type="button" value="Enrollment"/> <input type="button" value="Disenrollment"/> <input type="button" value="Schedule"/> <input type="button" value="Setup"/>		<input type="button" value="Work List"/> <input type="button" value="Profile"/> <input type="button" value="Results"/> <input type="button" value="Trends"/> <input type="button" value="Notes"/>																																																							
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Responders' Risk Summary		Patient Summary																																																							
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Back to Top																																																									

FIG. 6

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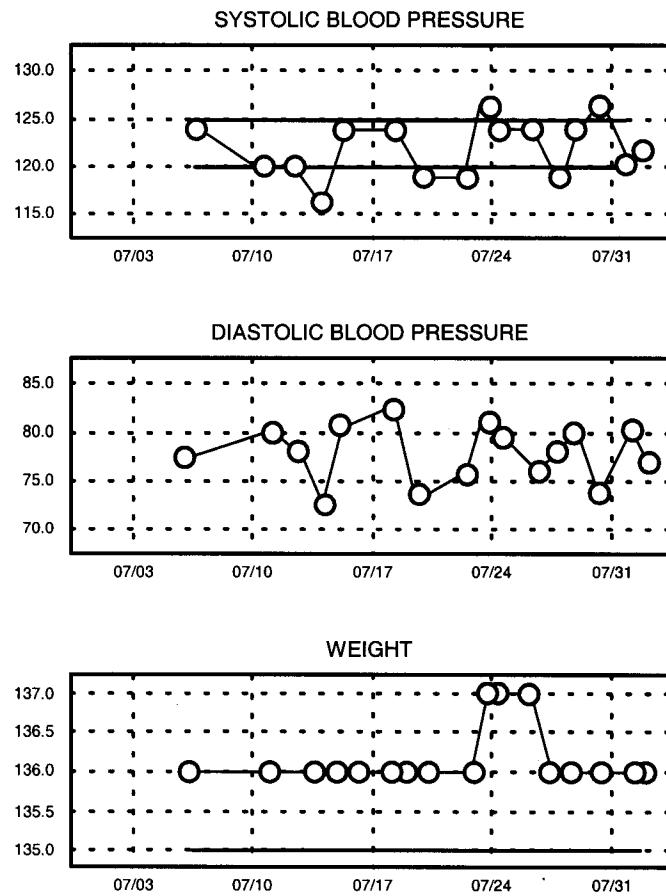


FIG. 7

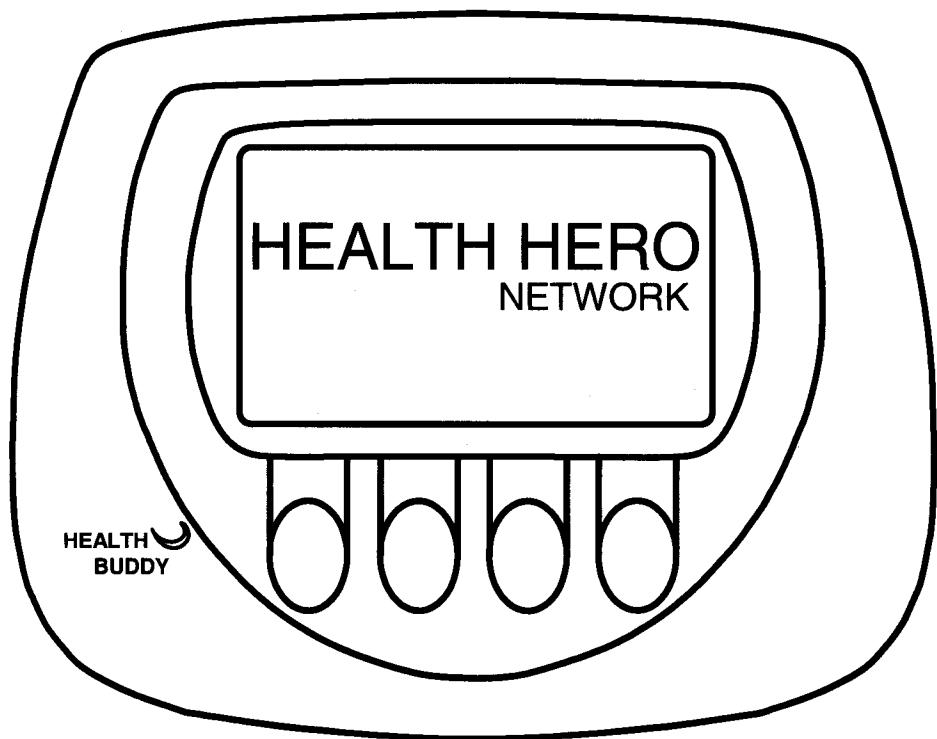
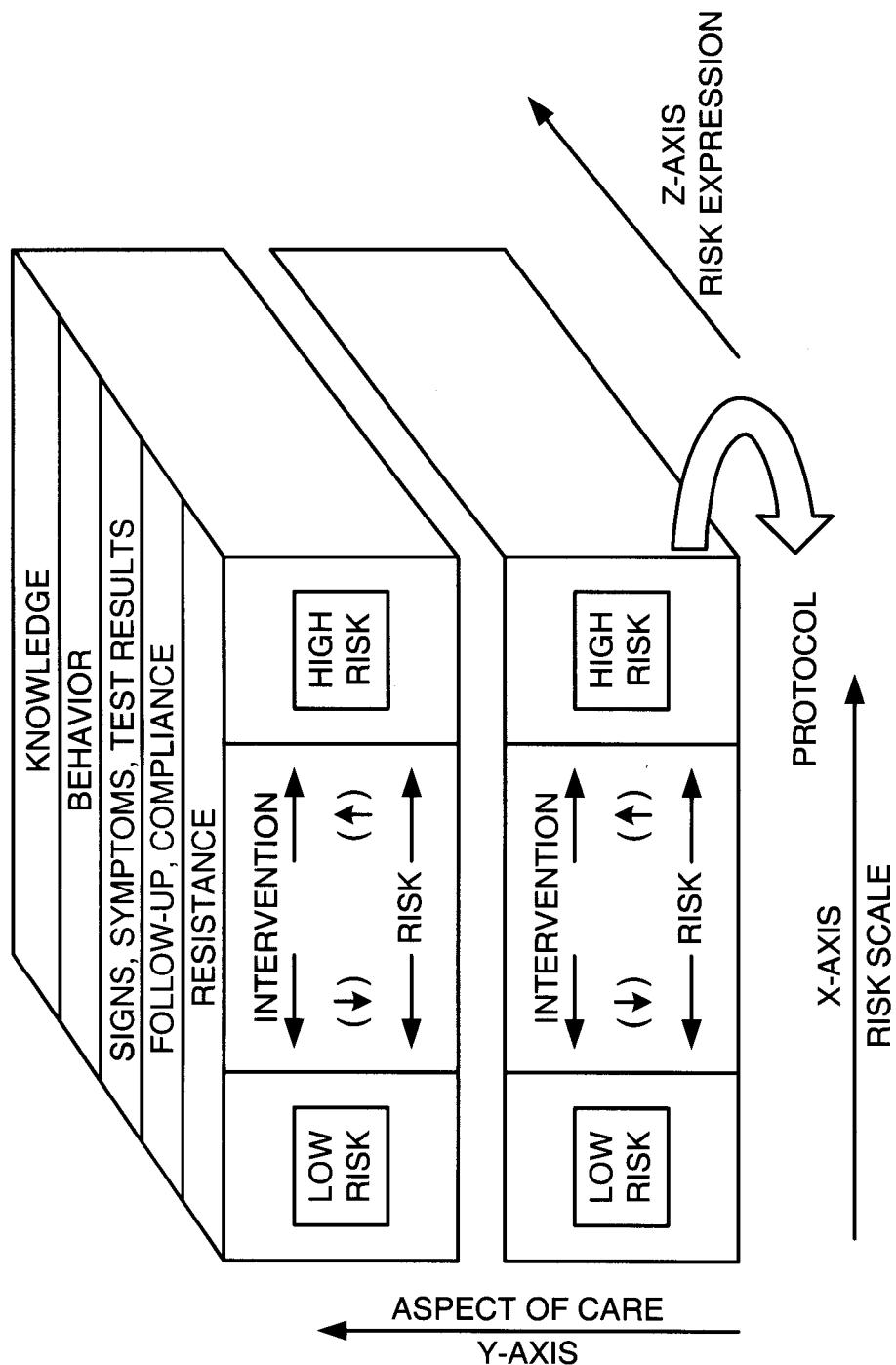


FIG. 8



A 3-DIMENSIONAL MODEL OF DISEASE

FIG. 9

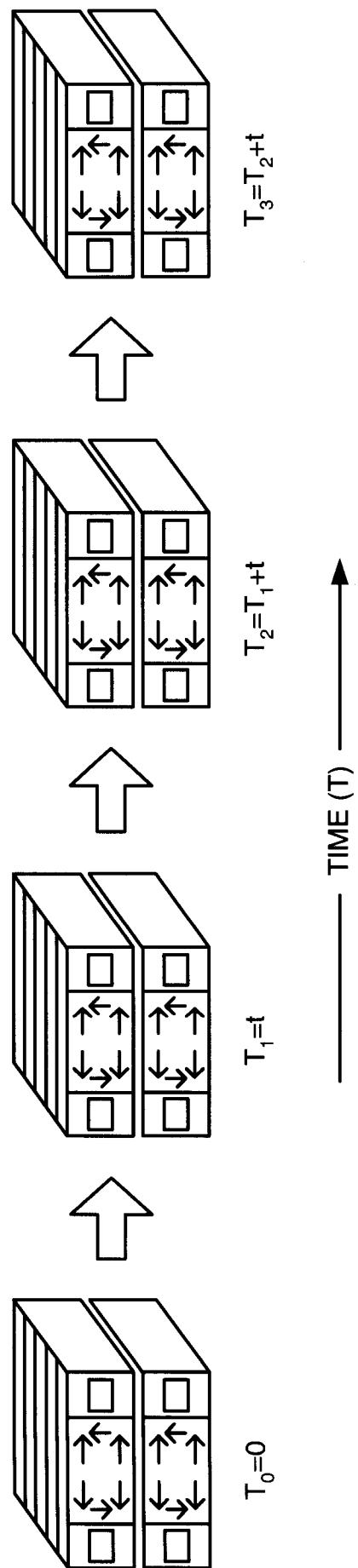


FIG. 10

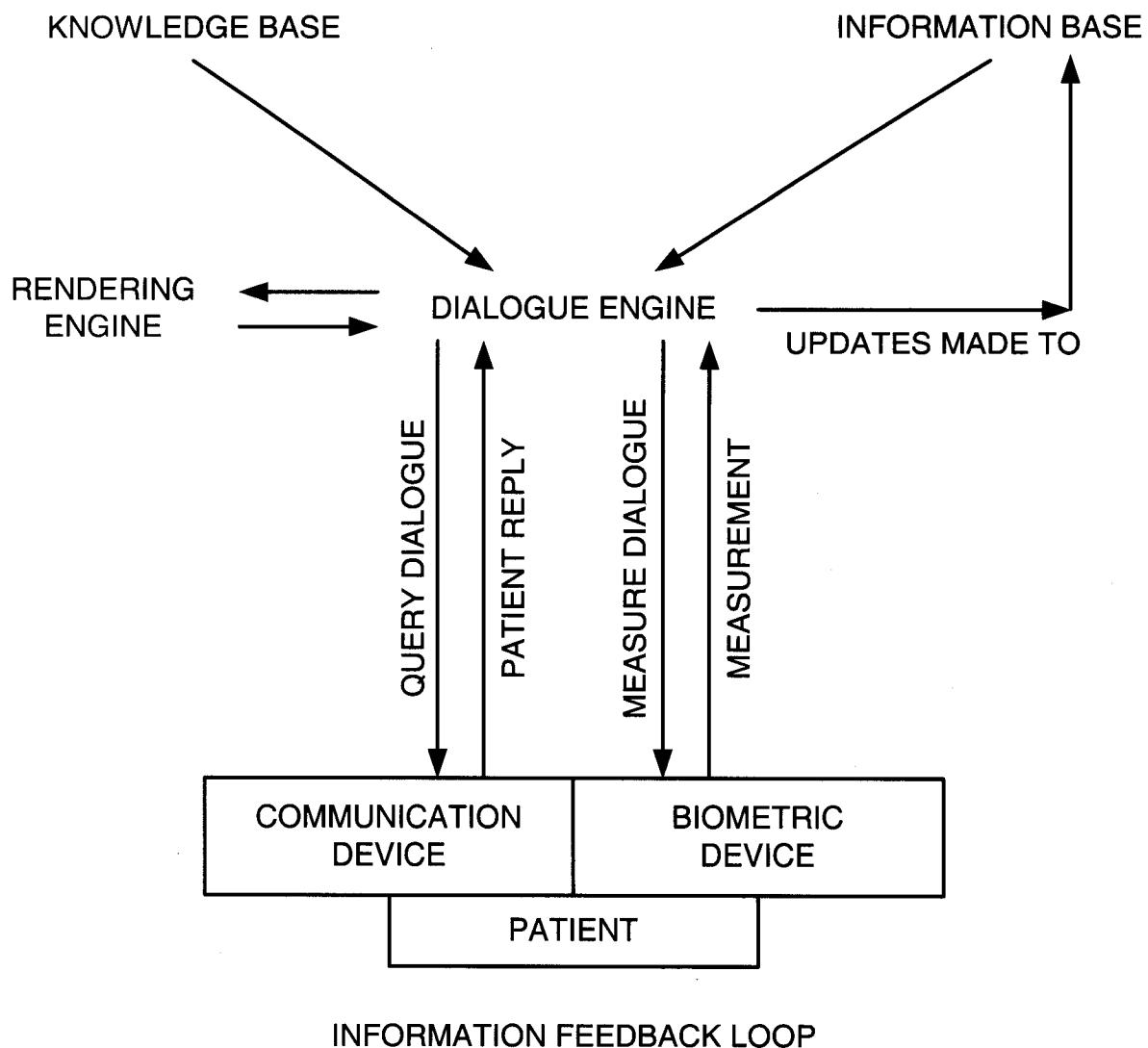


FIG. 11

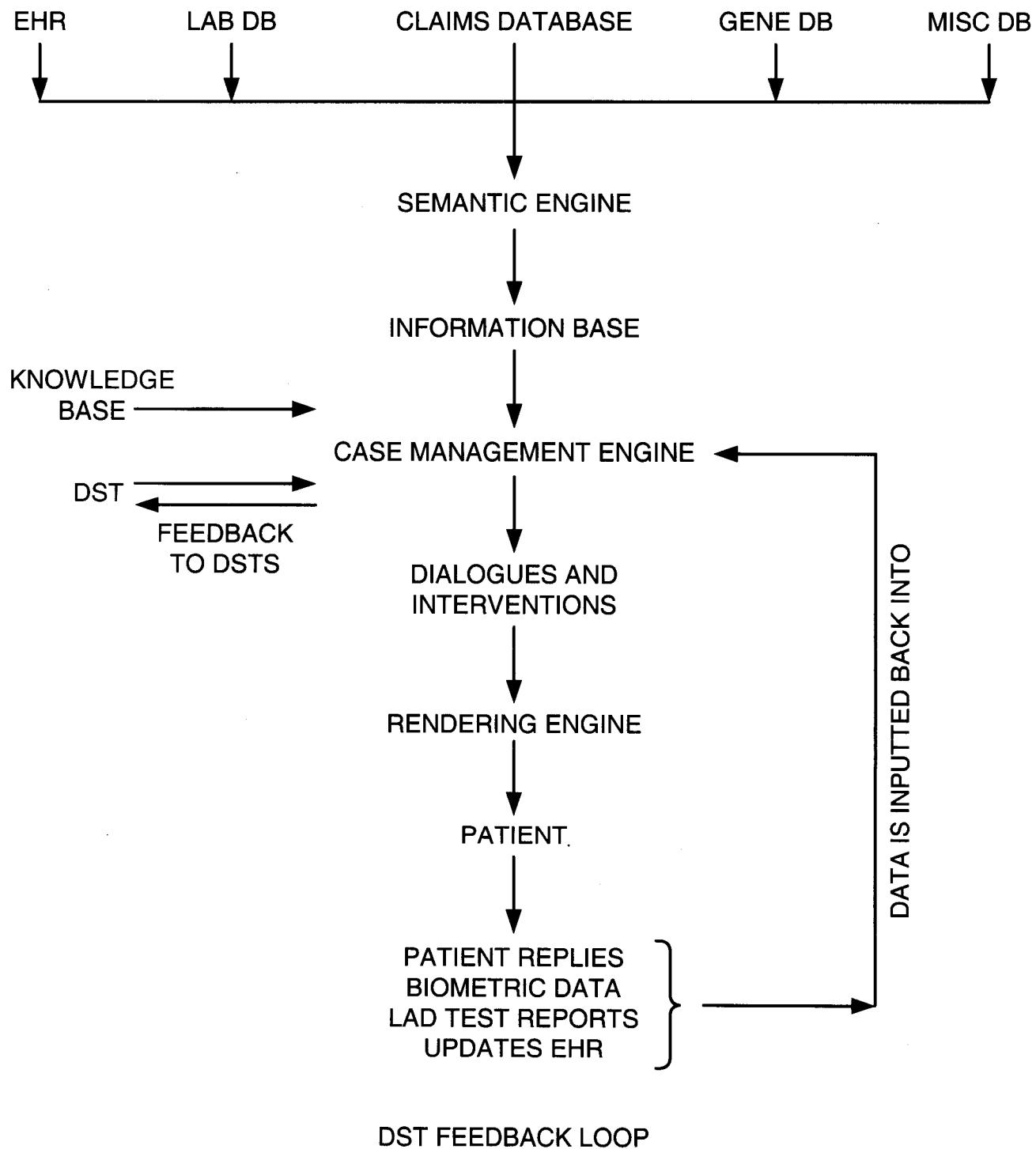


FIG. 12

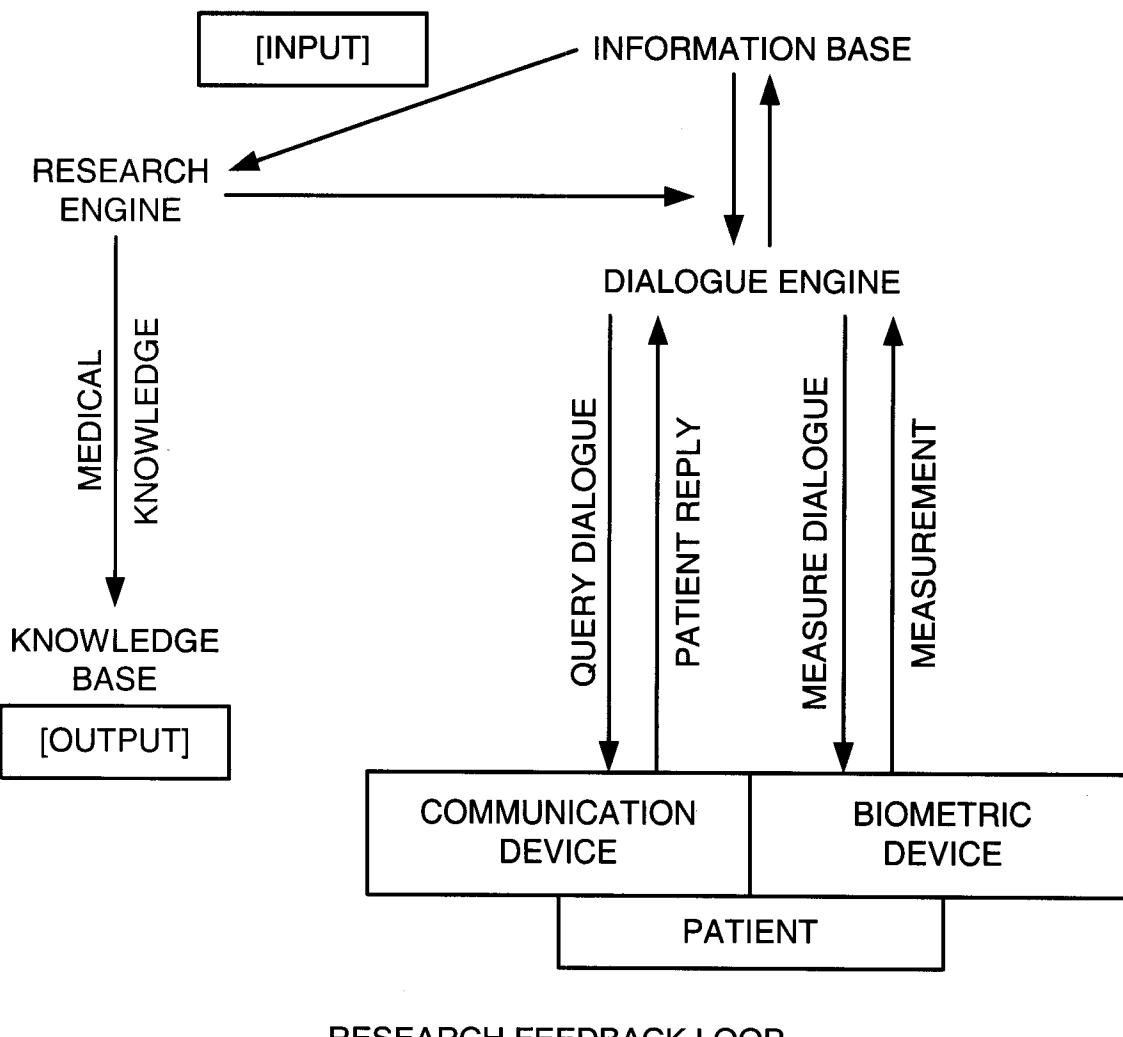


FIG. 13

AGENDA

- ☒ HEALTH HERO NETWORK BACKGROUND
- ☒ CURRENT TECHNOLOGY SOLUTIONS
- ☒ CONTRIBUTION TO MEDKNOWLEDGEMENT
 - INFORMATION AND KNOWLEDGE ACQUISITION → THE FEEDBACK LOOPS
 - CONTRIBUTION TO INNOVATIONS
 - LINKAGE TO OTHER PARTS OF PROJECT
 - PATIENT TRIALS AND EXPECTED OUTCOMES

FIG. 14

HEALTH HERO NETWORK VISION

- ☒ A BETTER MODEL OF CARE IS POSSIBLE
- ☒ CRISIS CARE → COORDINATED CARE
- ☒ eHEALTH NETWORKS AND TECHNOLOGIES = A POWERFUL ENABLER

FIG. 15

HEALTH HERO NETWORK

- FOUNDED 1988 IN MOUNTAIN VIEW, CALIFORNIA. HEALTH HERO NETWORK LTD ESTABLISHED 2003 IN DUBLIN, IRELAND.
- 25 EMPLOYEES, \$5 MILLION ANNUAL SALES, SERVING 30 PROVIDER SITES AND 2500 PATIENTS WITH DAILY IN-HOME MONITORING.
- SOLUTION PARTNERS SIGNED IN IRELAND, FRANCE, NETHERLANDS. EXPECTING TO ADD SPAIN, BELGIUM, NORWAY IN 2003.
- LICENSEES INCLUDE VETERANS HEALTH AFFAIRS, MERCY HEALTH SYSTEM, AMERICAN MEDICAL ALERT, THERASENSE, PHILIPS.

FIG. 16

eHEALTH DEMONSTRATION: VETERANS HEALTH AFFAIRS (US)

- CHRONIC CARE PROGRAM USING MODEL OF CARE BASED ON eHEALTH NETWORKS AND TECHNOLOGIES FROM HEALTH HERO NETWORK
- 791 ELDERLY HIGH-RISK PATIENTS WITH HYPERTENSION, HEART FAILURE, COPD, DIABETES, ENROLLED FOR 1 YEAR, COMPARED TO COMPARISON GROUP DATA
- RESULTS (DISEASE MANAGEMENT, VOLUME 5, NUMBER 2, 2002)
 - 63% REDUCTION IN HOSPITAL ADMISSIONS
 - 60% REDUCTION IN HOSPITAL BED DAYS
 - 40% REDUCTION IN EMERGENCY ROOM VISITS
 - 64% REDUCTION IN NURSING HOME ADMISSIONS
 - 88% REDUCTION IN NURSING HOME BED DAYS
 - SIGNIFICANT IMPROVEMENT IN QUALITY OF LIFE

FIG. 17

**eHEALTH DEMONSTRATION:
MERCY HEALTH SYSTEM (US)**

- ☒ DIABETES MANAGEMENT PROGRAM USING eHEALTH NETWORKS AND TECHNOLOGIES FROM HEALTH HERO NETWORK
- ☒ 169 LOW INCOME DIABETES PATIENTS, ONE YEAR STUDY PERIOD USING COMPARATIVE COHORT DATA FROM PREVIOUS CALENDAR YEAR
- ☒ RESULTS (DISEASE TECHNOLOGIES & THERAPEUTICS JOURNAL, DEC 2002)
 - OUTPATIENT VISITS REDUCED 49% ($p<0.001$)
 - INPATIENT ADMISSIONS REDUCED 32% ($p<0.07$)
 - ER ENCOUNTERS REDUCED 34% ($p<0.06$)
 - SIGNIFICANT INCREASE IN QUALITY OF LIFE SCORES
 - MEDICATION COMPLIANCE INCREASED FROM 34% TO 94%

FIG. 18

HEALTH HERO NETWORK PLATFORM

VISION: OPEN SYSTEM FOR CHRONIC CARE RESEARCH AND INNOVATION, ANY DEVICE, ANY DEVICE, ANY DISEASE, MANY PARTNERS

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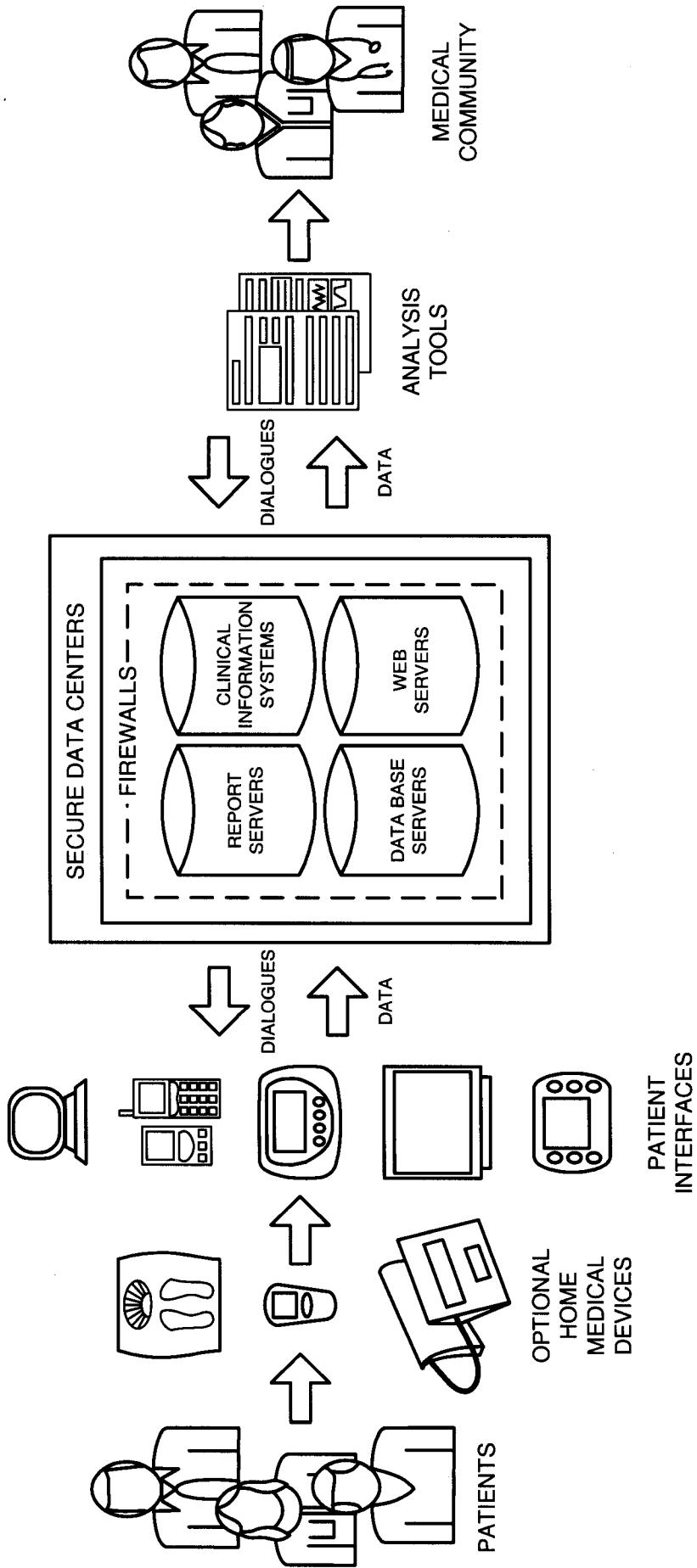


FIG. 19

DECISION SUPPORT TOOLS FOR CAREGIVERS

VISION: INTELLIGENT, SIMPLE, WEB-BASED, INTEGRATED WITH EXISTING CLINICAL INFORMATION SYSTEMS AND CARE PROCESSES

HEALTH HERO NETWORK																											
Luna, Craig Fri, April 4, 2003																											
<input type="button" value="Find Patient"/>	<input type="button" value="GO"/>	<input type="button" value="Contact Health Hero"/>	<input type="button" value="Help"/>	<input type="button" value="Log Out"/>																							
<input type="button" value="Home"/>	<input type="button" value="Patient"/>	<input type="button" value="Reports"/>	<input type="button" value="Enrollment"/>	<input type="button" value="Disenrollment"/>	<input type="button" value="Schedule"/>																						
<input type="button" value="Work List"/>	<input type="button" value="Profile"/>	<input type="button" value="Results"/>	<input type="button" value="Trends"/>	<input type="button" value="Notes"/>	<input type="button" value="Setup"/>																						
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You are viewing sessions for Nov 19, 2003 in the "All Programs" Program																											
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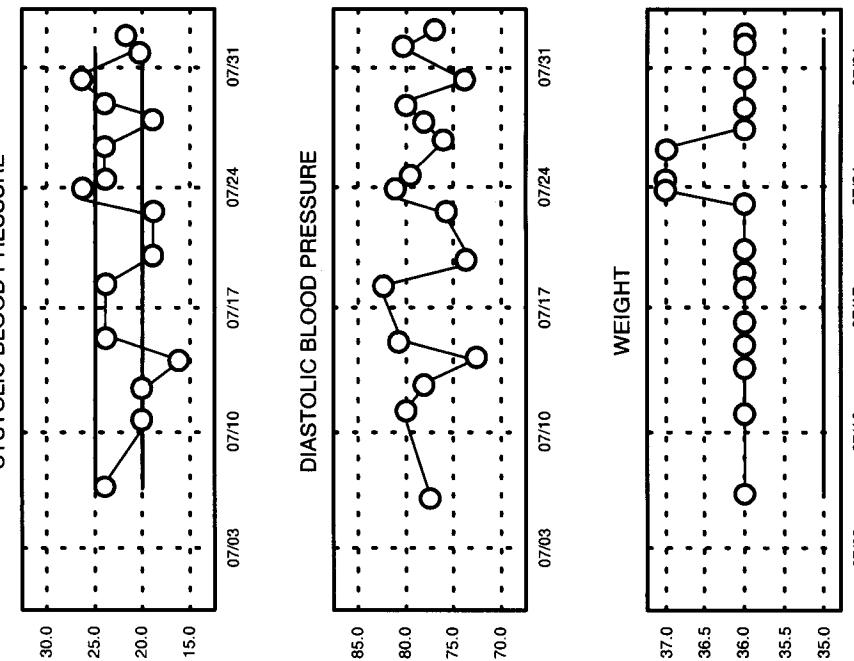


FIG. 20

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DAILY DIALOGUE WITH THE PATIENT

VISION: INTELLIGENT, INTERACTIVE, PERSONALIZED, SIMPLE,
INTEGRATED WITH CONSUMER AND MEDICAL DEVICES

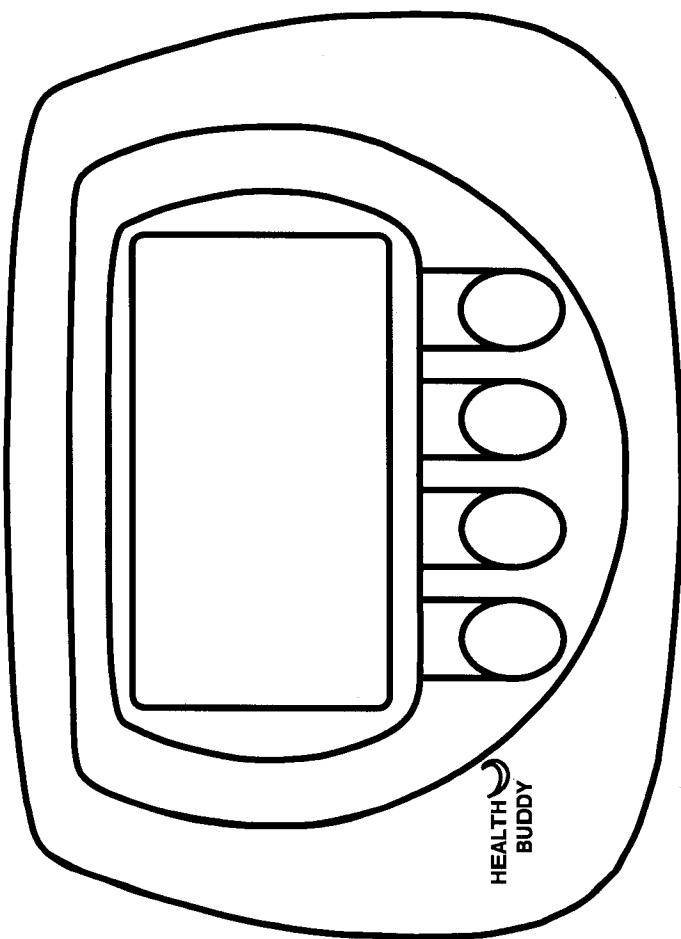
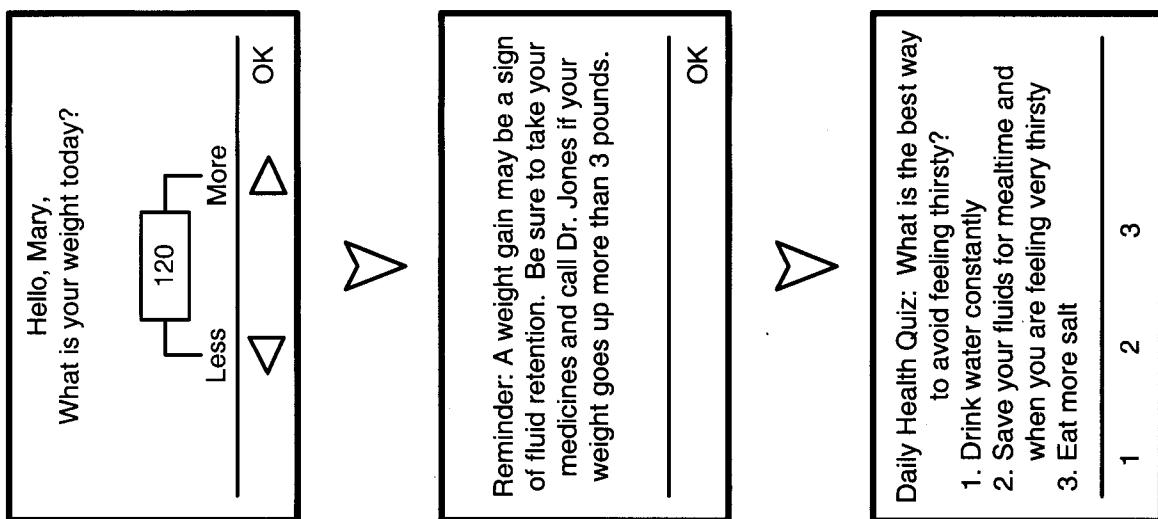


FIG. 21

PATIENT DIALOGUE CONTENT

VISION: BASED ON LATEST MEDICAL KNOWLEDGE, INDIVIDUALIZED. GENERATING REAL-TIME INFORMATION

Demo Library / Demonstration day dialogues	
Health Hero	NETWORK
Demo Library / Demonstration day dialogues	COPD Day
CHF Day, 0101	Health Hero NETWORK
<p>Legend: 0=No Risk @=Low Risk &=Medium Risk #=High Risk</p> <p>?Welcome back, Pat! Thank you for using the Health Buddy. Begin whenever you are ready</p> <p>[Greeting 2: None / General]</p> <p>@ Did you weigh yourself today? [Did you weigh today?: Weight / Behavior]</p> <p>@ What is your weight today? [Use the arrows to indicate your weight!]Weight trend: Weight / Symptoms]</p> <p>?{Q[Weight trend]}-{M[High Weight]}+2))</p> <p>0 True</p> <p>?{Q[Weight trend]} = {M[High Weight]}+2))</p> <p>0 False</p> <p>?{Q[Weight trend]}={M[High Weight]}+1))</p> <p>0 True</p>	<p>You may start at any time.</p> <p>Blood sugar trend question:</p> <p>for you! You may start at any COPD, so that you can take the disease process / knowledge] and symptoms: Disease process</p> <p>3 days? [More S&S: None / report this to your doctor today. our doctor's instructions. s]</p> <p>?This is much higher than your usual weight. Sometimes weight can be affected by heavy clothing or shoes. Please be sure that you weighed yourself without heavy clothing or shoes. [Much higher: Weight / Symptoms]</p> <p>#Remember if your weight is up 3 or more pounds, call Dr. Welby today at 555-1212. [Reminder: Weight / Symptoms]</p> <p>This is somewhat higher than your usual weight. Sometimes weight can be affected by heavy clothing and shoes. Please be sure that you weighed yourself without heavy clothing or shoes. [Somewhat higher: Weight / Symptoms]</p> <p>?{Q[Weight trend]}={M[High Weight]}+1))</p> <p>0 True</p> <p>This is slightly higher than your usual weight. Sometimes weight can be affected by heavy clothing and shoes. Please be sure that you weighed yourself without heavy clothing or shoes. [Slightly higher: Weight / Symptoms]</p> <p>@ Okay</p>
Demo Library / Demonstration day dialogues	Diabetes Day
CHF Day, 0101	Health Hero NETWORK
<p>Legend: 0=No Risk @=Low Risk &=Medium Risk #=High Risk</p> <p>?Welcome back, Pat! Thank you for using the Health Buddy. Begin whenever you are ready</p> <p>[Greeting 2: None / General]</p> <p>@ Did you eat for 8 hours or more? [Please use the blood sugar trend question:]</p> <p>@ Blood sugar under 70 is considered low. Remember to eat a sugar source if your blood sugar is low, take your medicine, and snacks as advised by your doctor. [Response: Blood sugar between 131-239 is referred to be moderately high. Take your insulin or diabetic pills per doctor. [Response: Blood sugar over 240 is generally too high. Remember to take more shortness of breath than Acknowledges: Pulmonary / or having more shortness of infection. [Instruct: Pulmonary /</p>	<p>You may start at any time.</p> <p>Blood sugar trend question:</p> <p>for you! You may start at any COPD, so that you can take the disease process / knowledge] and symptoms: Disease process</p> <p>3 days? [More S&S: None / report this to your doctor today. our doctor's instructions. s]</p> <p>?This is much higher than your usual weight. Sometimes weight can be affected by heavy clothing or shoes. Please be sure that you weighed yourself without heavy clothing or shoes. [Much higher: Weight / Symptoms]</p> <p>#Remember if your weight is up 3 or more pounds, call Dr. Welby today at 555-1212. [Reminder: Weight / Symptoms]</p> <p>This is somewhat higher than your usual weight. Sometimes weight can be affected by heavy clothing and shoes. Please be sure that you weighed yourself without heavy clothing or shoes. [Somewhat higher: Weight / Symptoms]</p> <p>?{Q[Weight trend]}={M[High Weight]}+1))</p> <p>0 True</p> <p>This is slightly higher than your usual weight. Sometimes weight can be affected by heavy clothing and shoes. Please be sure that you weighed yourself without heavy clothing or shoes. [Slightly higher: Weight / Symptoms]</p> <p>@ Okay</p>

HEALTH HERO NETWORK CONTRIBUTION TO MEDKNOWLEDGEMENT

- ☒ 1.1 INFORMATION AND KNOWLEDGE SOURCES AND FORMATS
- ☒ 1.2 INFORMATION ACQUISITION → INFORMATION BASE
- ☒ 1.3 KNOWLEDGE ACQUISITION → KNOWLEDGE BASE
- ☒ 1.4 INFORMATION AND KNOWLEDGE PROCESSING → DSTs TO IDENTIFY GAPS BETWEEN INFORMATION BASE AND KNOWLEDGE BASE (I.E., GAPS BETWEEN WHAT IS AND WHAT SHOULD BE)
- ☒ 1.5 INFORMATION AND KNOWLEDGE RENDERING → RENDERING ENGINE IS THE INTERFACE TO END USERS
- ☒ 1.6 INFORMATION AND KNOWLEDGE ACQUISITION → THE FEEDBACK LOOPS

FIG. 23

INFORMATION AND KNOWLEDGE ACQUISITION → THE FEEDBACK LOOPS

- ☒ PATIENT DIALOGUE ENGINE: INDIVIDUALIZED COMMUNICATION
 - GENERATED USING INFORMATION AND KNOWLEDGE BASE
 - INTERFACE WITH RENDERING ENGINE
 - FEEDBACK TO INFORMATION BASE
- ☒ CARE MANAGEMENT ENGINE: JUST-IN-TIME CARE
 - GENERATED USING INFORMATION AND KNOWLEDGE BASE
 - FEEDBACK TO DSTs
- ☒ RESEARCH ENGINE: REAL-TIME RESEARCH
 - INTERFACE TO INFORMATION BASE [EXTRACT EXISTING DATA]
 - INTERFACE TO DIALOGUE ENGINE [WHEN NEW DATA IS REQUIRED]
 - FEEDBACK TO KNOWLEDGE BASE [NEW DISCOVERIES]

FIG. 24

HEALTH HERO NETWORK CONTRIBUTION TO INNOVATIONS

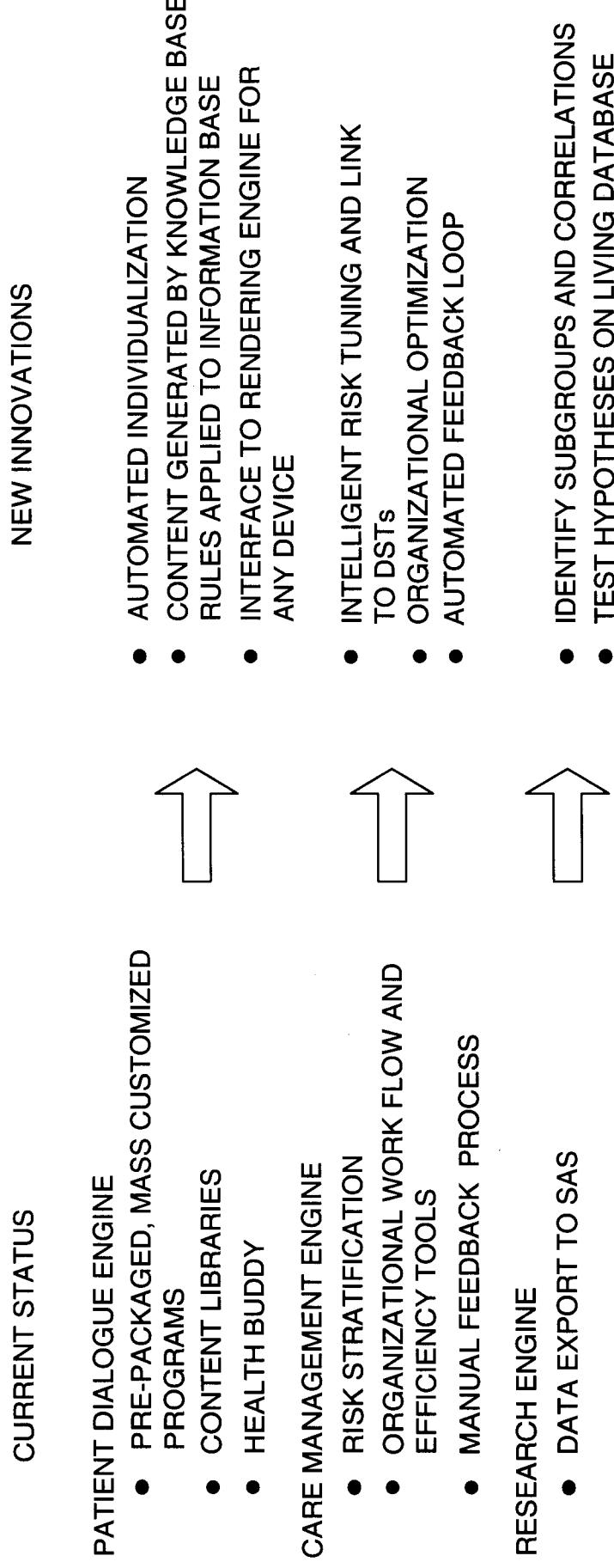
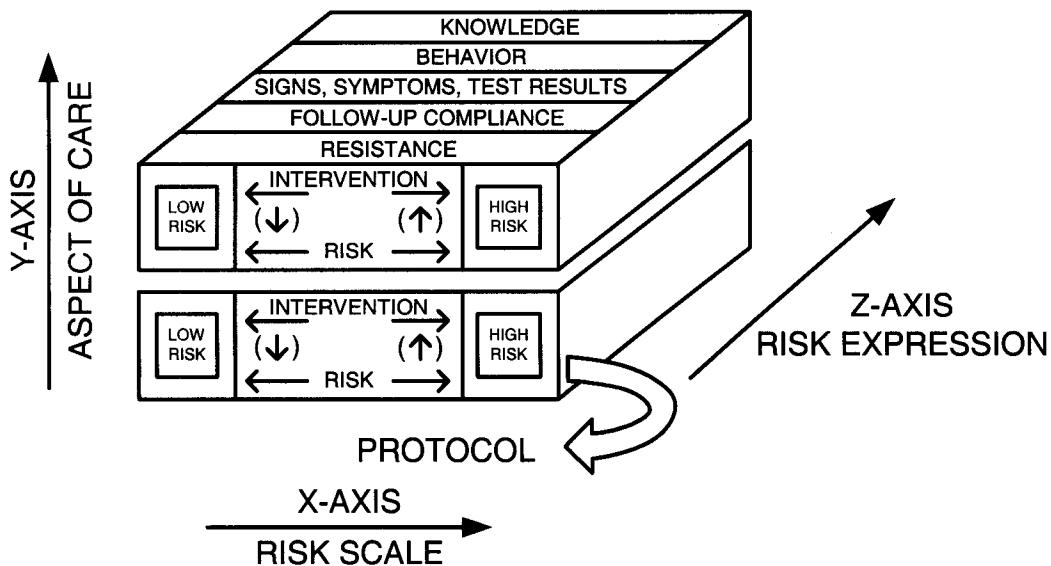


FIG. 25

INTEGRATING FEEDBACK LOOPS WITHIN MEDKNOWLEDGEMENT

- ☒ APPLICATION PROGRAM INTERFACES
- ☒ STANDARDS FOR DATA CLASSIFICATION
- ☒ ONTOLOGY FOR INFORMATION AND KNOWLEDGE USED IN FEEDBACK PROCESS



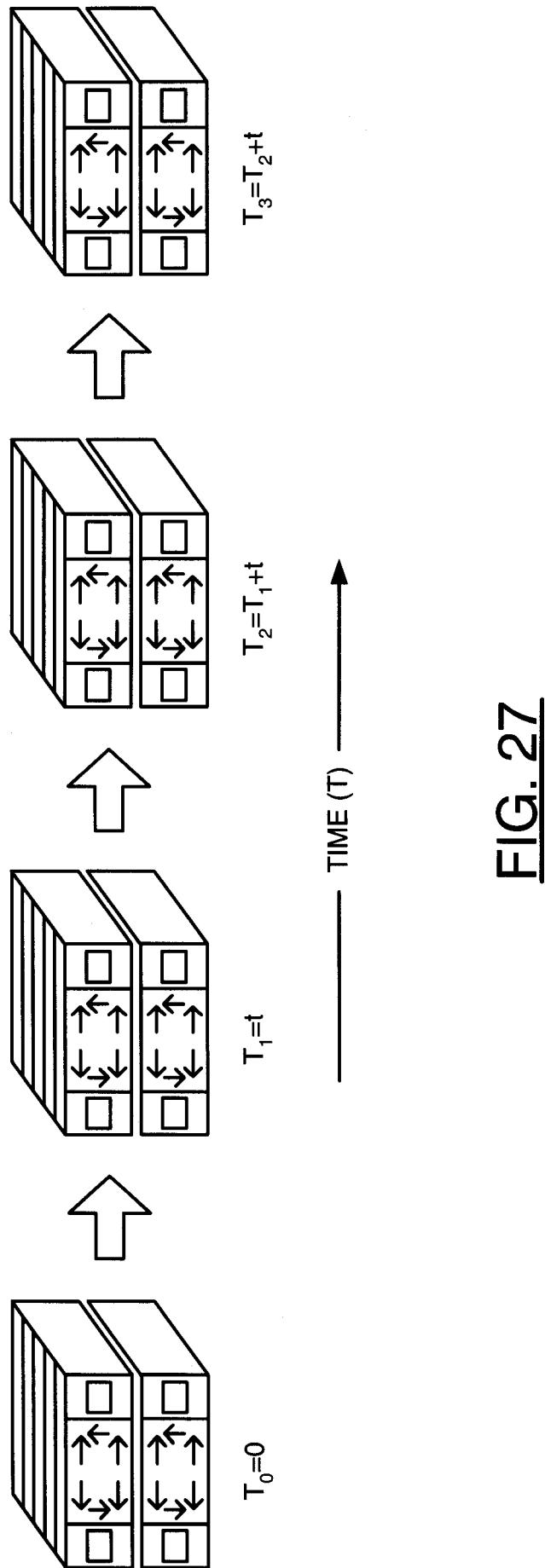
A 3-DIMENSIONAL MODEL OF DISEASE

FIG. 26

FEEDBACK PROCESS

OVERALL GOAL IS APPLY AND GENERATE MEDICAL KNOWLEDGE
IN A CONTINUOUS PROCESS THAT LEADS TO LOWEST ACHIEVABLE
RISK RESULTING IN:

- HIGHER QUALITY OF LIFE
- IMPROVED CLINICAL OUTCOMES
- LOWER COST OF CARE

**FIG. 27**

EXPECTED RESULTS

- ☒ REDUCED EMERGENCY DEPARTMENT ENCOUNTERS AND HOSPITALIZATIONS BY DETECTING PATIENT PROBLEMS BEFORE THEY BECOME A CRISIS
- ☒ IMPROVED PATIENT COMPLIANCE BY EDUCATING, MOTIVATING AND MONITORING HEALTH STATUS AND BY PROVIDING PERSONALIZED AND RELEVANT INFORMATION
- ☒ IMPROVED SAFETY AND QUALITY OF CARE BY PROVIDING TIMELY AND ACTIONABLE INFORMATION TO HEALTHCARE PROFESSIONALS THROUGH QUALITY ASSURED PROCESSES THAT CAN BE CONTINUOUSLY IMPROVED
- ☒ CONTINUITY OF CARE, PARTICULARLY FOR THE ELDERLY, THROUGH INTEGRATED, INTERCONNECTED MONITORING AND INFORMATION SYSTEMS, RATHER THAN FRAGMENTED, EPISODIC, AND CRISIS DRIVEN CARE

FIG. 28